IN THE CLAIMS

Please amend the claims as follows:

1. (Original) A method of forming a dielectric layer comprising:
forming a layer of hafnium oxide by chemical vapor deposition; and
forming a layer of a lanthanide oxide by electron beam evaporation, wherein the layer of hafnium oxide is adjacent to and in contact with the layer of lanthanide oxide.

2. (Original) The method of claim 1, wherein the method further includes forming the layer of hafnium oxide on a substrate and forming the layer of lanthanide oxide on the layer of hafnium oxide.

3. (Original) The method of claim 1, wherein the method further includes forming the layer of lanthanide oxide on a substrate and forming the layer of hafnium oxide on the layer of lanthanide oxide.

4. (Original) The method of claim 1, wherein the method further includes controlling the forming of the layer of hafnium oxide and the forming of the layer of the lanthanide oxide to form a lanthanide oxide/hafnium oxide nanolaminate.

5. (Original) The method of claim 1, wherein the method further includes limiting a combined thickness of lanthanide oxide layers to a thickness ranging from about 2 nanometers to about 10 nanometers.

6. (Original) The method of claim 1, wherein the method further includes limiting a combined thickness of hafnium oxide layers to a thickness ranging from about 2 nanometers to about 10 nanometers.

7. (Original) The method of claim 1, wherein the method further includes forming one or more layers of lanthanide oxide, each layer of lanthanide oxide having a thickness ranging from about 2 nanometers to about 10 nanometers.

8. (Original) The method of claim 1, wherein forming a layer of a lanthanide oxide includes forming an oxide selected from Pr_2O_3, Nd_2O_3, Sm_2O_3, Gd_2O_3, and Dy_2O_3.

9. (Original) The method of claim 1, wherein the method further includes maintaining the substrate at a temperature ranging from about 100 °C to about 150 °C during electron beam deposition and maintaining the substrate at a temperature ranging from about 200 °C to about 400 °C during chemical vapor deposition.

10. (Original) The method of claim 1, wherein forming a layer of hafnium oxide by chemical vapor deposition includes forming a layer of hafnium oxide by chemical vapor deposition using precursors that do not contain carbon.

11. (Original) The method of claim 1, wherein the method further includes adding oxygen during the electron beam evaporation of the layer of lanthanide oxide.

12. (Original) A method of forming a dielectric layer comprising:

forming a layer of hafnium oxide on a substrate by chemical vapor deposition using a $Hf(NO_3)_4$ precursor; and

forming a layer of a lanthanide oxide on the layer of hafnium oxide by electron beam evaporation.

13. (Original) The method of claim 12, wherein the method further includes controlling the forming of the layer of hafnium oxide and the forming of the layer of the lanthanide oxide to form a lanthanide oxide/hafnium oxide nanolaminate.

14. (Original) The method of claim 12, wherein the method further includes limiting a combined thickness of lanthanide oxide layers to a thickness between about 2 nanometers and about 10 nanometers.

15. (Original) The method of claim 12, wherein forming a layer of a lanthanide oxide includes forming an oxide selected from Pr_2O_3, Nd_2O_3, Sm_2O_3, Gd_2O_3, and Dy_2O_3.

16. (Original) The method of claim 12, wherein the method further includes maintaining the substrate at a temperature ranging from about 100 °C to about 150 °C during electron beam deposition and maintaining the substrate at a temperature ranging from about 200 °C to about 400 °C during chemical vapor deposition.

17. (Original) A method of forming a capacitor, comprising:

forming a first conductive layer on a substrate;

forming a dielectric layer on the first conductive layer; and

forming a second conductive layer on the dielectric layer, wherein forming the dielectric layer includes:

forming a layer of hafnium oxide on the first conductive layer by chemical vapor deposition using a $Hf(NO_3)_4$ precursor; and

forming a layer of a lanthanide oxide on the layer of hafnium oxide by electron beam evaporation, wherein the dielectric layer is formed with a combined thickness of lanthanide oxide layers limited to between about 2 nanometers and about 10 nanometers.

18. (Original) The method of claim 17, wherein the method further includes controlling the forming of the layer of hafnium oxide and the forming of the layer of the lanthanide oxide on the layer of hafnium to form a lanthanide oxide/hafnium oxide nanolaminate.

19. (Original) The method of claim 17, wherein forming a layer of a lanthanide oxide includes forming an oxide selected from Pr_2O_3, Nd_2O_3, Sm_2O_3, Gd_2O_3, and Dy_2O_3.

20. (Original) The method of claim 17, wherein the method further includes maintaining the substrate at a temperature ranging from about 100 °C to about 150 °C during electron beam deposition and maintaining the substrate at a temperature ranging from about 200 °C to about 400 °C during chemical vapor deposition.

21. (Original) A method of forming a transistor comprising:

forming a source region and a drain region in a substrate, the source region and the drain region separated by a body region;

forming a dielectric layer on the body region, the dielectric layer containing a nanolaminate of hafnium oxide and a lanthanide oxide; and

coupling a gate to the dielectric layer, wherein forming the nanolaminate includes:

forming a layer of hafnium oxide by chemical vapor deposition; and

forming a layer of a lanthanide oxide by electron beam evaporation.

22. (Original) The method of claim 21, wherein the method further includes limiting a combined thickness of lanthanide oxide layers to a thickness between about 2 nanometers and about 10 nanometers.

23. (Original) The method of claim 21, wherein the method further includes forming one or more layers of lanthanide oxide, each layer limited to a thickness between about 2 nanometers and about 10 nanometers.

24. (Original) The method of claim 21, wherein forming a layer of a lanthanide oxide includes forming an oxide selected from Pr_2O_3, Nd_2O_3, Sm_2O_3, Gd_2O_3, and Dy_2O_3.

25. (Currently Amended) The method of claim 21, wherein forming a layer of a hafnium oxide by chemical vapor deposition includes using a ~~hafnium-nitrate~~ <u>hafnium nitrate</u> precursor.

26. (Original) The method of claim 21, wherein forming a layer of hafnium oxide by chemical vapor deposition includes forming a layer of hafnium oxide by chemical vapor deposition using precursors that do not contain carbon.

27. (Original) The method of claim 21, wherein the method further includes maintaining the substrate at a temperature ranging from about 100 °C to about 150 °C during electron beam deposition and maintaining the substrate at a temperature ranging from about 200 °C to about 400 °C during chemical vapor deposition.

28. (Original) The method of claim 21, wherein the method further includes adding oxygen during the electron beam evaporation of the layer of lanthanide oxide.

29. (Original) A method of forming a memory comprising:

forming a number of access transistors including forming a dielectric layer on a body region in a substrate, the body region between a source region and a drain region; and

forming a number of word lines, each word line coupled to one of the number of access transistors, wherein forming the dielectric layer includes:

forming a layer of hafnium oxide on the body region by chemical vapor deposition using precursors that do not contain carbon; and

forming a layer of a lanthanide oxide on the layer of hafnium oxide by electron beam evaporation.

30. (Original) The method of claim 29, wherein the method further includes limiting a combined thickness of lanthanide oxide layers to between about 2 nanometers and about 10 nanometers and limiting a combined thickness of hafnium oxide layers to between about 2 nanometers and about 10 nanometers.

31. (Original) The method of claim 29, wherein the method further includes forming one or more layers of lanthanide oxide, each layer limited to a thickness between about 2 nanometers and about 10 nanometers.

32. (Original) The method of claim 29, wherein forming a layer of a lanthanide oxide includes forming an oxide selected from Pr_2O_3, Nd_2O_3, Sm_2O_3, Gd_2O_3, and Dy_2O_3.

33. (Currently Amended) The method of claim 29, wherein forming a layer of a hafnium oxide by chemical vapor deposition includes using a ~~hafnium-nitrato~~ hafnium nitrate precursor.

34. (Original) The method of claim 29, wherein forming a dielectric layer includes forming two or more layers of lanthanide oxide with at least two layers having different lanthanide oxides selected from Pr_2O_3, Nd_2O_3, Sm_2O_3, Gd_2O_3, and Dy_2O_3.

35. (Original) The method of claim 29, wherein the method further includes maintaining the substrate at a temperature ranging from about 100 °C to about 150 °C during electron beam deposition and maintaining the substrate at a temperature ranging from about 200 °C to about 400 °C during chemical vapor deposition.

36. (Original) The method of claim 29, wherein the method further includes adding oxygen during the electron beam evaporation of the layer of lanthanide oxide.

37. (Original) A method of forming an electronic system comprising:

providing a controller; and

coupling a device to the controller, wherein at least one of the controller and the device includes a dielectric layer having a nanolaminate of hafnium oxide and a lanthanide oxide, wherein forming the nanolaminate includes:

forming a layer of hafnium oxide by chemical vapor deposition; and

forming a layer of a lanthanide oxide by electron beam evaporation.

38. (Original) The method of claim 37, wherein the method further includes limiting a combined thickness of lanthanide oxide layers to between about 2 nanometers and about 10 nanometers.

39. (Original) The method of claim 37, wherein the method further includes limiting a combined thickness of hafnium oxide layers to between about 2 nanometers and about 10 nanometers.

40. (Original) The method of claim 37, wherein the method further includes forming one or more layers of lanthanide oxide, each layer limited to a thickness between about 2 nanometers and about 10 nanometers.

41. (Original) The method of claim 37, wherein forming a layer of a lanthanide oxide includes forming an oxide selected from Pr_2O_3, Nd_2O_3, Sm_2O_3, Gd_2O_3, and Dy_2O_3.

42. (Currently Amended) The method of claim 37, wherein forming a layer of a hafnium oxide by chemical vapor deposition includes using a ~~hafnium-nitrato~~ hafnium nitrate precursor.

43. (Original) The method of claim 37, wherein forming a layer of hafnium oxide by chemical vapor deposition includes forming a layer of hafnium oxide by chemical vapor deposition using precursors that do not contain carbon.

44. (Original) The method of claim 37, wherein the method further includes maintaining the substrate at a temperature ranging from about 100 °C to about 150 °C during electron beam deposition and maintaining the substrate at a temperature ranging from about 200 °C to about 400 °C during chemical vapor deposition.

45. (Original) The method of claim 37, wherein the method further includes adding oxygen during the electron beam evaporation of the layer of lanthanide oxide.

46-72. (Canceled)